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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/618,196	07/18/2000	Girish Vsr Chiruvolu	132,427	9701

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EXAMINER

NGUYEN, VAN KIM T

ART UNIT PAPER NUMBER

2661

DATE MAILED: 03/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/618,196

Applicant(s)

CHIRUVOLU, GIRISH VSR

Examiner

Van Kim T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 11, 15, 16, 22-29, 36-43, 49 and 51-57 is/are rejected.
- 7) ☒ Claim(s) 9, 12-14, 17-21, 30-35, 44-48, and 50 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 6, 7. 6) ☐ Other: _____

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DETAILED ACTION

This Office Action is responsive to communications filed on July 18, 2000.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Appropriate correction is required.

Claim Objections

Claim 9 is objected to because of the following informalities:

Claim 9 recites the limitation LCN bit, it is not clear what LCN bit is. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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Claims 1-5, 7-8, 10, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Silberschatz et al (US 6,556,578).

Regarding claims 1-2, as shown in Figs. 1-3, Silberschatz discloses a method for detecting congestion, comprising setting at least one threshold value (\max_{th} , \min_{th}) for buffer occupancy; and dropping all packets when an average queue size exceeds the maximum threshold (steps 34, 36; col. 4: lines 27-29).

Regarding claim 3, Silberschatz also discloses marking packets (steps 38, 40) when the average queue size is between the minimum threshold and the maximum threshold (col. 4: lines 30-35); and dropping all packets when an average queue size equals or exceeds the maximum threshold (step 34, 36; col. 4: lines 27-29).

Regarding claim 4, Silberschatz also discloses the threshold also comprises a feedback threshold (steps 52-53; col. 4: lines 60-63).

Regarding claims 5 and 7-8, Silberschatz also discloses marking outgoing packets deterministically when the average queue size is between the minimum threshold and the feedback threshold; dropping incoming packets probabilistically and marking the outgoing packets when the average queue size is between the feedback threshold and the maximum threshold; and dropping all of said incoming packets when an average queue size equals or exceeds the maximum threshold (Steps 34-53; cols. 4-5).

Regarding claims 10 and 15, Silberschatz also discloses the step of calculating the average queue size based on an exponential moving average (col. 4: lines 14-18).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 11, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silberschatz et al (US 6,556,578), as applied to claim 1 above, in view of Troxel (US 6,147,970).

Silberschatz discloses a method for managing data transmission comprising detecting network congestion and determining whether to drop packets.

However, regarding claim 6, Silberschatz does not call for the average queue size is a size of a bucket of a token bucket filter.

Regarding claims 11 and 16, Silberschatz also does not call for varying the number of tokens consumed by data of unit size, and transmitting the packet if the number of tokens consumed by the packet is less than or equal to available tokens.

As shown in Figures 1-5, Troxel teaches the average queue size is a size of a bucket of a token bucket filter (col. 15: line 65 – col. 16: line 12).

Troxel also teaches varying a number of tokens consumed by a data packet; and transmitting the packet if the number of tokens consumed by the packet is less than or equal to available tokens (col. 16: lines 13- 65).

Since it is highly desirable to accurately maintain high throughput with minimum probability of congestion, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Troxel's method of utilizing the leaky bucket method in

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Silberschatz' communications system, motivated by the need to improve data transmission efficiency and better use of resources.

Claim Rejections - 35 USC § 102

Claims 22-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Hadi Salim et al (US 6,535,482).

Regarding claims 22 and 24-25, as shown in Figures 1-11, Hadi Salim discloses a method of regulating traffic flow between nodes, comprising: detecting congestion (col. 2: lines 53-54); sending a message (ISQ) to at least one node (col. 2: lines 55-58); regulating at least one traffic rate of said at least one node (discard packet if congestion is very severe; col. 6: lines 60-61); and detecting when congestion is clear (col. 9: line 66 – col. 10: line 6).

Regarding claim 23, Hadi Salim also discloses checking to see whether the packet experienced congestion and adjust the window size accordingly. Thus it is inherent that upon determining the congestion is clear, the window size is incremented (step 640, col. 10: lines).

Claim Rejections - 35 USC § 103

Claims 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hadi Salim et al, as applied to claim 22 above, in view of Troxel (US 6,147,970).

Hadi Salim discloses a method of regulating traffic flows between nodes.

However, Hadi Salim does not call for varying a number of tokens consumed by a data packet; and transmitting the packet if a number of tokens consumed by the packet is less than or equal to available tokens.

As shown in Figures 1-5, Troxel also teaches varying a number of tokens consumed by a data packet; and transmitting the packet if the number of tokens consumed by the packet is less than or equal to available tokens (col. 16: lines 13- 65).

Since it is highly desirable to accurately maintain high throughput with minimum probability of congestion, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Troxel's method of utilizing the leaky bucket method in Hadi Salim's communications system, motivated by the need to improve data transmission efficiency and better use of resources.

Claim Rejections - 35 USC § 102

Claims 36 –38, 42-43, and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Troxel (US 6,147,970).

Regarding claim 36-37 and 42-43, Troxel discloses a method of controlling traffic flow comprising varying a number of tokens consumed by a data packet; and transmitting said data packet if a number of tokens consumed by said data packet is less than or equal to available tokens (col. 16: lines 13- 65).

Regarding claims 38 and 49, Troxel also discloses the number of tokens consumed by a data packet is varied based on state and demand (conforming or nonconforming; high priority or low priority; col. 19: line 66 – col. 21: line 40).

Claim Rejections - 35 USC § 102

Claims 51-57 are rejected under 35 U.S.C. 102(e) as being anticipated by Nandy et al (US 6,646,988).

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Regarding claims 51 and 53-54, Nandy discloses an apparatus for controlling traffic flow, comprising at least one input node (102, 104, 114, 116), at least one output node (106, 108, 112), at least one core node (110), and at least one token bucket filter (200, 204) corresponding to at least one of the nodes; wherein the core node does not maintain per flow state information and carry a large number of aggregated flows; and the output node and input node maintain per flow state (traffic profiles are kept at the edge of the network; col. 2: lines 27-32).

Regarding claim 52, Nandy also discloses the token bucket filter comprises a token generator (308), and a bucket (302, 304, 306) operably connected to the token generator to hold at least one generated token.

Regarding claim 55-57, Nandy also discloses the nodes are part of differentiated service domain or part of an Internet (col. 1: lines 30-67).

Allowable Subject Matter

Claim 9, 12-14, 17-21, 28, 30-35, 39-41, 44-48, and 50 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Aweya et al (US 6,690,645); Bonaventure (US 6,680,907); Nguyen (US 6,680,906); Bergamasco et al (US 6,675,220); Barri et al (US 6,657,962); Kloth et al (US 6,643,260); Giroux et al (US 6,618,378); Morgenstern et al (US 6,614,756); Nikuie et al (US 6,510,160); Chen et al

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(US 6,487,170); Galand et al (US 6,424,624); Beshai et al (US 6,404,735); Lyon et al (US 6,333,917); Skirmont (US 6,252,848); and Hatono et al (US 5,914,936).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Van Kim T. Nguyen whose telephone number is 703-305-7692.

The examiner can normally be reached on 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Olms can be reached on 703-305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

vkn


DOUGLAS OLMS
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